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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,731	08/28/2003	Yoshiaki Fukuzumi	241999US2S	5707

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ROSE, KIESHA L

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,731

Applicant(s)

FUKUZUMI, YOSHIAKI

Examiner

Kiesha L. Rose

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/28/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

This Office Action is in response to the filing of the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,3,5 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Stobbs (U.S. Publication 2004/0150091).

Stobbs discloses a magnetic random access memory (Fig. 2) that contains a semiconductor chip (13) comprising a magnetic element, an enclosure (22) which seals the magnetic chip and substantially spherical magnetic substance particles which are interspersed in the enclosure, where the enclosure is a plastic package containing either epoxy resin or silicone resin.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2822

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,4,7,9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butt (U.S. Patent 4,524,238) in view of Stobbs.

Butt discloses a semiconductor package (Figs. 1 and 6) that contains a semiconductor chip (12), an enclosure which seals the chip and has a base material (16) and cap material (24) joined together by sealing material, a magnetic film (92) provided on a chip side surface of the base material and on an inner surface of the cap material so as to surround the chip. The cap is coated with a thin refractory oxide layer, which is the magnetic film. (Column 3, lines 62-65) The enclosure is ceramic where the ceramic package contains Al₂O₃, a leadframe comprising a die pad which the chip is mounted, an inner lead portion (22) sealed by the enclosure, an outer lead portion (23) out of the enclosure, where the inner lead portion has a stacked structure in which a plurality of conductive layers are stacked via insulating layers and the plurality of conductive layers are electrically connected to the corresponding external connection electrodes on the chip by bonding wires (25). Butt discloses all the limitations except for the chip to comprise a magnetic element. Whereas Stobbs discloses a magnetic random access memory (Fig. 2) that contains a semiconductor chip (13) that contains a magnetic element. The semiconductor chip contains a magnetic element to function as a magnetic chip that uses magnetic charges to store bits of data. (Page 1, Paragraph 3) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Butts by incorporating a magnetic chip

Art Unit: 2822

to use magnetic charges to store bits of data in a magnetic random access memory device as taught by Stobbs.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stobbs in view of Butt.

Stobbs discloses all the limitations except for the enclosure to be ceramic and contains Al_2O_3 . Whereas Butt discloses a semiconductor package (Fig. 1) that contains a chip (12) with an enclosure (24) formed to enclose the chip where the enclosure is ceramic where the ceramic package contains Al_2O_3 . The enclosure contains a ceramic package containing Al_2O_3 because the impurities of the material do not prevent bonding in a desired environment. (Column 4, line 10-22) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Stobbs by incorporating a ceramic enclosure containing Al_2O_3 since the impurities of the material do not prevent bonding in a desired environment as taught by Butt.

Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stobbs as applied to claim 1 above, and further in view of Butt.

Stobbs discloses all the limitations except for a leadframe. Whereas Butt discloses a semiconductor package (Fig. 1) that contains a chip (12) and a leadframe comprising a die pad which the chip is mounted, an inner lead portion (22) sealed by the enclosure, an outer lead portion (23) out of the enclosure, where the inner lead portion has a stacked structure in which a plurality of conductive layers are stacked via insulating layers and the plurality of conductive layers are electrically connected to the

Art Unit: 2822

corresponding external connection electrodes on the chip by bonding wires (25). A

leadframe is formed for electrical connection to the chip. (Column 3, lines 15-17)

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Stobbs by incorporating a leadframe to form electrical connection to the chip as taught by Butt.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stobbs as applied to claim 1 above, and further in view of Hirai (U.S. Publication 2002/0131296).

Stobbs discloses all the limitations except for the memory element to be a tunnel magneto-resistance element. Whereas Hirai discloses a magnetic random access memory that discloses a memory chip that is a tunnel magneto-resistance element. The memory chip is a tunnel magneto-resistance element so that the electric resistance of the magnetic material is changed according to the direction of the magnetization or the existence of the magnetization for the MRAM. (Page 1, Paragraph 4) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Stobbs by incorporating the magnetic element to be a tunnel magneto-resistance element so that the electric resistance of the magnetic material is changed according to the direction of the magnetization or the existence of the magnetization for the MRAM as taught by Hirai.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Butt and Stobbs as applied to claim 2 above, and further in view of Hirai (U.S. Publication 2002/0131296).

Butt discloses all the limitations except for the memory element to be a tunnel magneto-resistance element. Whereas Hirai discloses a magnetic random access memory that discloses a memory chip that is a tunnel magneto-resistance element. The memory chip is a tunnel magneto-resistance element so that the electric resistance of the magnetic material is changed according to the direction of the magnetization or the existence of the magnetization for the MRAM. (Page 1, Paragraph 4) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Butt by incorporating the magnetic element to be a tunnel magneto-resistance element so that the electric resistance of the magnetic material is changed according to the direction of the magnetization or the existence of the magnetization for the MRAM as taught by Hirai.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stobbs.

Stobbs discloses the claimed invention except for the magnetic substance particles to have a diameter of 20 microns or less or them to occupy 1 wt% or more of the enclosure. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the magnetic substance particles to have a diameter of 20 microns or less or them to occupy 1 wt% or more of the enclosure, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In *re Aller*, 105 USPQ 233. (1955)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Tuttle (U.S. Patent 6,429,044) discloses a MRAM with an enclosure with magnetic substance particles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on M-F 8:30-6:00 off 2nd Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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